RAINFALL IN JAMAICA.

Through the kindness of Mr. Maxwell Hall, meteorologist to the government of Jamaica and now in charge of the meteorological service of that island, we have received the following data:

Comparative table of rainfall.
[Based upon the average stations only.]
SEPTEMBER, 1909.

Divisions.	Relative area.	Number of stations.	Rainfall.	
			1909.	Average.
			Inches.	*Inches.*
Northeastern division	25	17	15.18	7.80
Northern division	22	41	12.70	5.37
West-central division	26	20	19.45	10.34
Southern division	27	26	16.50	6.33
Means	100		15.66	7.44

The rainfall for the island for the month of September was therefore more than twice the average. This heavy rainfall was due to two barometric depressions; the first continued from the 13th to the 15th, inclusive, and moving from the west of Jamaica onwards, it swept the Cayman Islands, the northwest of Cuba, and devastated New Orleans. The second continued from the 22d to the 27th, and again moved from the west of Jamaica.

These rains were highly beneficial to Jamaica.

The heaviest rainfall, 36.34 inches, occurred at Point Hill in St. Catherine; the smallest, 4.81 inches, occurred at Buff Bay.

Grand Cayman, August, 1909.	Total fall.	Greatest fall.		Number of days on which 0.01 inch fell.
		Amount.	Date.	
East End	14.96	12.32	24	10
Bodden Town	7.05	6.25	24	4
Georgetown	13.11	6.00	24	15

RIVERS AND FLOODS.

The principal floods of the month occurred in the Rio Grande and in its tributaries in northern New Mexico. The heavy rains of August had left the ground in a more or less saturated condition, and during the first six days of September rains were frequent and at times heavy. Over the Zuni Mountain country of New Mexico there were heavy downpours on August 29 and 30, and on September 1, 4, and 5. The result was a vast volume of flood waters that rushed down the mountain sides, filling all the arroyos and canyons, and causing a great amount of damage. The dam of the Bluewater Development Company in Valencia County, N. Mex., was partially carried away, and the spillway of the Zuni Dam at Blackrock, McKinley County, was undermined for some distance. The officials at the dams were able to telephone notice of the disasters to places below, and no lives were lost. Estimates as to the amount of damage vary considerably. The railroads were the principal sufferers, as about 10,000 feet of track were washed away, and the roadbeds for several miles on either side softened. There was very little loss of livestock and crops, as the worst of the flood waters ran over raw and uncultivated lands.

The flood wave passed down the Rio Grande, the crest reaching San Marcial, N. Mex., on September 7, with a stage of 14 feet, 3 feet above the flood stage, and El Paso, Tex., on September 10, with a stage of 14.5 feet, 0.5 foot above the flood stage. The river at El Paso was at flood stage from September 9 to 13, inclusive.

Warnings were sent to El Paso on September 7, and repeated southward to the mouth of the river. Newspaper reports indicate that considerable damage was done along the lower river, mainly, however, by flood waters from the Mexican tributaries.

The usual seasonal low-water stages prevailed in the great rivers, but they were considerably higher than during the corresponding period of the preceding year, and, as a rule, they were ample for the purposes of navigation.

Hydrographs for typical points on several principal rivers are shown on Chart I. The stations selected for charting are Keokuk, St. Louis, Memphis, Vicksburg, and New Orleans, on the Mississippi; Cincinnati and Cairo, on the Ohio; Nashville, on the Cumberland; Johnsonville, on the Tennessee; Kansas City, on the Missouri; Little Rock, on the Arkansas; and Shreveport on the Red.—*H. C. Frankenfield, Professor of Meteorology.*

SPECIAL PAPERS ON GENERAL METEOROLOGY.

RECENT ADDITIONS TO THE WEATHER BUREAU LIBRARY.

C. FITZHUGH TALMAN, Librarian.

The following have been selected from among the titles of books recently received, as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies. Most of them can be lent for a limited time to officials and employees who make application for them. Anonymous publications are indicated by a ——.

Austria. K. und k. Kriegsmarine.
... Jahrbuch der meteorologischen, erdmagnetischen und seismischen Beobachtungen. N. F. 13. Band. 1908. Pola. 1909. xxxv, 152 p. f°. (Veröffentlichungen des Hydrographischen Amtes der K. und k. Kriegsmarine in Pola. Gruppe 2.)

Beauchamp, R. de.
Essai de défense contre la grêle. Poitiers. 1908. 22 p. 8°.

Brodersen, Hans.
Berichte über Blitzschläge der Jahre 1884 bis 1899. Kiel. 1909. p. 51-275. 8°. (Hrsg. vom Naturwissenschaftlichen Verein für Schleswig-Holstein als Fortsetzung von: L. Weber, Berichte über Blitzchläge in der Provinz Schleswig-Holstein. 1.-4. Folge. Kiel 1885.)

Bunkofer, Wilhelm.
Entwurf eines Apparates für Beobachtung der Luftdruckschwankungen mit sehr starker Vergrösserung. Wertheim a. M. 1908. 7 p. 8°. (Wissenschaftliche Beilage zum Jahresbericht des Grossherzoglichen Gymnasiums zu Wertheim für das Schuljahr 1907-1908.)

Burgerstein, Alfred.
Die Transpiration der Pflanzen. Jena. 1904. x, 283 p. 8°.

Carrère, Jean.
La terre tremblante. Calabre et Messine 1907-1908-1909. Paris. 1909. 341 p. 12°.

Ficker, H. von.
Klimatographie von Tirol und Vorarlberg. Wien. 1909. 162 p. 4°. (Klimatographie von Oesterreich. Heft 4. Hrsg. von ... der K. k. Zentralstation für Meteorologie und Geodynamik.)

Gellens, H. *and others.*
La marée-tempête du 12 mars 1906 dans le bassin de l'Escaut maritime. Bruxelles. 1908. 62 p. 18 pl. 8°. (Extrait du 1 fascicule des Annales des travaux publics de Belgique, février 1908.)

Genoa. R. Istituto idrografico.
Riepilogo annuale delle osservazioni meteorologiche 1908. Genova. 1909. 17 p. f°.

Gräter, A. S.
Das neue Weltbild nach dem Niedergang der mechanischen Natur-